

(43) International Publication Date
2 June 2005 (02.06.2005)

PCT

(10) International Publication Number
WO 2005/050140 A1(51) International Patent Classification⁷: **G01D 5/244**(21) International Application Number:
PCT/IB2004/052410(22) International Filing Date:
12 November 2004 (12.11.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
03104243.5 18 November 2003 (18.11.2003) EP(71) Applicant (for all designated States except US): **KONINKLIJKE PHILIPS ELECTRONICS N.V. [NL/NL];**
Groenewoudseweg 1, NL-5621 BA Eindhoven (NL).

(72) Inventors; and

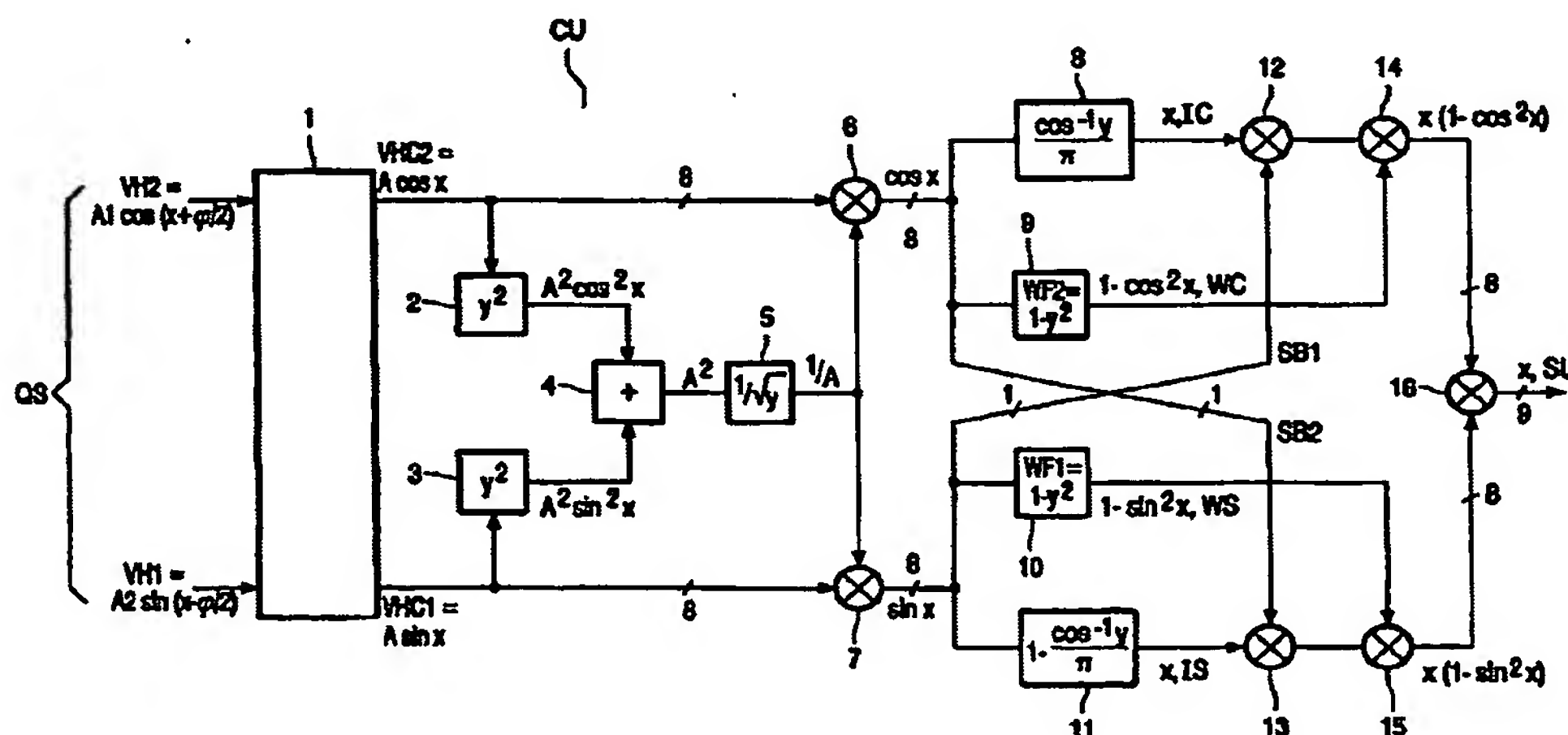
(75) Inventors/Applicants (for US only): **STEK, Aalbert**
[NL/NL]; c/o Prof. Holstlaan 6, NL-5656 AA Eindhoven
(NL). **JANSSEN, Anthonius, P., G., E. [NL/NL];** c/o
Prof. Holstlaan 6, NL-5656 AA Eindhoven (NL).(74) Agents: **MAK, Theodorus, N. et al.; Prof. Holstlaan 6,**
NL-5656 AA Eindhoven (NL).(81) Designated States (unless otherwise indicated, for every
kind of national protection available): AE, AG, AL, AM,
AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,
KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,
MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG,
PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM,
TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM,
ZW.(84) Designated States (unless otherwise indicated, for every
kind of regional protection available): ARIPO (BW, GH,
GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,
ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),
European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI,
FR, GB, GR, HU, IE, IS, IT, LU, MC, NL, PL, PT, RO, SE,
SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ,
GW, ML, MR, NE, SN, TD, TG).

Declaration under Rule 4.17:

— as to applicant's entitlement to apply for and be granted
a patent (Rule 4.17(ii)) for the following designations AE,
AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ,
CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE,

[Continued on next page]

(54) Title: POSITION DETERMINING



(57) **Abstract:** A position determining system for determining a position of a rotor of a rotating motor (M) has sensors (HS1, HS2) that are coupled to the rotor. The sensors (HS1, HS2) generate, in response to a rotation of the rotor, a quadrature signal (QS) that has a sine component (VH1) and a cosine component (VH2). The position determining system calculates (CU) a sum (A^2) of a squared value of the sine component ($A^2 \sin^2 x$) and a squared value of the cosine component ($A^2 \cos^2 x$). An amplitude correction factor (A) is calculated as the squared root of the sum (A^2). An amplitude corrected sine component ($\sin(x)$) is obtained by dividing the sine component ($A \sin(x)$) by the amplitude correction factor (A). An amplitude corrected cosine component ($\cos(x)$) is obtained by dividing the cosine component ($A \cos(x)$) by the amplitude correction factor (A).